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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,342	06/25/2003	Seishin Mikami	4041J-000732	2633

27572 7590 01/26/2005

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EXAMINER
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TRAN, CHUC

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/603,342

Applicant(s)

MIKAMI ET AL.

Examiner

Chuc D Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. The indicated allowability of claims 2-3 and 6-7 are withdrawn in view of the newly discovered reference(s) to Janky et al (USP. 5,918,183). Rejections based on the newly cited reference(s) follow.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Thill et al (USP. 6,087,990).

Regarding claim 8, Thill et al disclose an antenna apparatus mounted in a hole (24) defined by a metal attachment plate (21) (Fig. 1), the antenna apparatus comprising:

- a planar antenna (10) having a radiating element (18) and a ground plate (22) (Fig. 1),  
wherein

- the radiating element (18) is positioned in one direction from one side of the metal attachment plate (21), and the ground plate (22) is spaced in an opposite direction from an opposite side of the metal attachment plate (21) (Fig. 1).

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Regarding claim 9, Thill et al disclose that an internal edge of the hole (24) is positioned between the radiating element (18) and the ground plate (22) (Fig. 1)

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thill et al (USP. 6,087,990) in view of Janky et al (USP. 5,918,183).

Regarding claims 1 and 2, Thill et al disclose an antenna apparatus comprising:

- a planar antenna (10) having a radiating element (18) and a ground plate (22) (Fig. 1).

However, Thill et al is silent on the limitation of the antenna mounted in a hole defined by a vehicle, wherein the radiating element is spaced in one direction from one side of the vehicle body, and the ground plate is spaced in an opposite direction from an opposite side of the vehicle body. Janky et al disclose the vehicle body defines a concavity (32), a hole (38) is formed in the bottom of the concavity (32) (Fig. 10). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the antenna (10) (Thill et al. Fig. 1) mounted in the (Janky et al concavity (32)) (Fig. 10) such that the radiating element (18) (Thill et al. Fig. 1) is spaced in one direction from one side of the vehicle body (34) (Janky et al. Fig. 10), and the ground plate (22) (Thill et al. Fig. 1) is spaced in an opposite direction from an opposite side of the vehicle body (34) (Janky et al. Fig. 1) in order to improve the transceiver gain signal of the planar antenna mounted on the vehicles (Thill et al Col. 1, Line 14).

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Regarding claim 3, Thill et al disclose that a metal plate (21) (Fig. 1) positioned between the radiating element (18) and the ground plate (22) (Fig. 1).

Regarding claim 6, Thill et al disclose that the radiating element (18), the ground (22) and the metal plate (21) are molded by a resin (42) and (20) (Fig. 1) (Col. 3, Line 22).

Regarding claim 10, Thill et al disclose an antenna apparatus mounted on a vehicle, the antenna apparatus comprising:

- a planar antenna (10) having a radiating element (18) and a ground plate (22);
- a metal vehicle body (12) (Fig. 1) (Col. 2, Line 41). However, Thill et al is silent on

the limitation of the vehicular body defining a hole which has an internal edge. Janky et al disclose the antenna apparatus mounted on the vehicle comprising the vehicular body (34) defining a hole (32) (Fig. 8) which has an internal edge (Fig. 8). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the planar antenna (10) having a radiating element (18) and a ground plate (22) (Thill et al Fig. 1) into the hole (32) (Janky et al Fig. 8 & 10), wherein the internal edge of the hole (32) (Janky Fig. \* & 10) is located between the radiating element (18) and the ground plate (22) (Thill et al Fig. 1) in order to improve the transceiver signal gain in the antenna (Thill et al Col. 1, Line 15).

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Janky et al in view of Thill et al.

Regarding claim 7, Janky et al disclose a method for mounting a planar antenna on the vehicle, the method comprising the steps of:

- boring a hole (32) in a body (34) (Fig. 8 & 10) of the vehicle (Col. 7, Line 1); and
- locating the planar antenna in the hole (Col. 7, Line 1). However, Janky et al is silent

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on the limitation of the planar antenna having a radiating element and a ground plate. Thill et al disclose a planar antenna (10) having a radiating element (18) and a ground plate (22) (Fig. 1). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the planar antenna (10) (Thill et al. Fig. 1) having a radiating element (18) and a ground plate (22) (Fig. 1) into the hole (32) (Janky et al. Fig. 10) so that an internal edge of the hole (32) (Janky et al. Fig. 10) is positioned between the radiating element (18) and the ground plate (22) of (Thill et al. Fig. 1) in order to improve the transceiver gain signal of the planar antenna mounted on the vehicle (Janky et al Col. 2, Line 15).

***Allowable Subject Matter***

8. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Citation of relevant Prior Art***

Prior Art Jou (USP. 5,898,404) disclose non-coplanar resonant element printed circuit board antenna.

Prior Art Izadian (USP. 5,300,936) disclose multiple band antenna.

Prior Art Chen et al (USP. 6,317,084) disclose broadband plate antenna.

Prior Art Nalbandian et al (USP. 5,471,221) disclose dual frequency microstrip antenna with inserted strips.

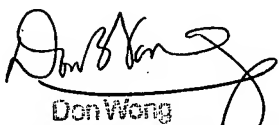
***Inquiry***

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC  
January 21, 2005

  
Don Wong  
Supervisory Patent Examiner  
Technology Center 2800